

COPY OF ALL CLAIMS

13. A composite comprising

Aa) at least one first layer which comprises a mixture I1, comprising a mix IIa consisting of

a) from 1 to 95% by weight of a solid III, preferably a basic solid III, having a primary particle size of from 5 nm to 20 μ m and

b) from 5 to 99% by weight of a polymeric composition IV obtainable by polymerization of

b1) from 5 to 100% by weight, based on the composition IV, of condensation product V of

α) at least one compound VI which is able to condense with a carboxylic acid or a sulfonic acid as defined in β or a derivative or a mixture of two or more thereof, and

β) at least 1 mol per mol of the compound VI of a carboxylic acid or sulfonic acid VII which contains at least one free-radically polymerizable functional group, or a derivative thereof or a mixture of two or more thereof,

and

b2) from 0 to 95% by weight, based on the composition IV, of a further compound VIII having a mean molecular weight (number average) of at least 5000 and polyether segments in the main chain or a side

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Serial No. 09/520,028

chain,

where the proportion by weight of the mix Iia in the mixture Ia is from 1 to 100% by weight,

and the layer is free of an electron-conducting, electro-chemically active compound,

and

B) at least one second layer which comprises a polymeric binder and an electron-conducting, electrochemically active compound,

wherein the first layer or layers and the second layer or layers are joined to one another by one of the two methods V1 or V2:

V1) Lamination of the first layer or layers with the second layer or layers under the action of heat or under the action of heat and pressure, or

V2) Corona treatment of the first layer or layers, the second layer or layers or the first layer or layers and the second layer or layers and subsequent bringing together of the corona-treated first layer or layers with the corona-treated second layer or layers.

17. A composite as claimed in claim 15, wherein the bonding layer or layers C is/are a polyethylene oxide, a polyvinyl ether, a polyacrylate, a polymethacrylate, polyvinylpyrrolidone, a polyurethane, a wax-like (co)polyolefin, a rubber-like material, polyisobutylene or a mixture of two or more thereof.

19. A process for producing a composite as claimed in claim 13, which comprises joining the first layer or layers and the second layer or layers and, if present, the bonding layer or layers to one another by hot lamination.
20. A process for producing a composite as claimed in claim 14, which comprises joining the first layer or layers and the second layer or layers and, if present, the bonding layer or layers to one another by hot lamination.
24. Method of using a composite as claimed in claim 13 electrochemical cell, in a sensor, an electrochromic window, a display, a capacitor or an ion-conducting film.